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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/070,292	03/05/2002	Hirokazu Tanaka	204552022500	3051

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EXAMINER

BARR, MICHAEL E

ART UNIT

PAPER NUMBER

1762

DATE MAILED: 03/31/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/070,292

Applicant(s)

TANAKA ET AL.

Examiner

Michael Barr

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 March 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☒ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2, 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Oath/Declaration

1. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:

It does not identify the city and either state or foreign country of *residence of each inventor*. The residence information may be provided on either on an application data sheet or supplemental oath or declaration.

Drawings

2. The drawings are objected to because there is only one drawing and it is labeled as “Fig. 1”. Where only a single view is used in an application to illustrate the claimed invention, it must not be numbered and the abbreviation “Fig.” must not appear (see MPEP 608.02). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-2 and 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boeke et al. in view of Hirsch et al.

Boeke et al. teaches adding inorganic filler to a polymeric material, molding the material into an article, irradiating the molded material with a laser, and then treating the molded material with a palladium catalyst, before electroless plating, where the inorganic filler can be silica or fiberglass and the polymeric material can be polyphenylene sulfide or a blend of polymeric materials (Col. 2, line 39-Col. 3, line 30; Col. 5, lines 9-19). The use of the blend of polymeric materials reads on the limitations of Claim 6, as the two or more different polymers in the blend would have been expected to have different laser ablation threshold values. Boeke et al. does not teach that the palladium catalyst is in the form an aqueous solution. However, the application of palladium in an aqueous solution as a catalyst to an electroless plating process is well known in the art as shown by Hirsch et al. Hirsch et al. teaches electroless plating a polymer substrate by dipping the polymer in an aqueous palladium solution, as a catalyst, and then electroless plating (Col. 3, lines 18-35). It would have been an obvious modification to Boeke et al. to apply the palladium catalyst by dipping the polymeric molded material into an aqueous solution of the palladium catalyst, with the expectation of providing the desired electroless plating catalyst on the surface, since such application of the electroless plating catalyst as an aqueous solution is well known and conventional in the art, as shown by Hirsch et al.

Boeke et al. does not teach that the polymeric article is a mold. However, the use of the article of Boeke et al. as a mold is merely the intended use of the article. The molded articles described by Boeke et al. are capable of being used as a mold, as they can provide a surface upon

which material can be molded. Therefore, the material of Boeke et al. meets the material limitations of the claim.

Boeke et al. does not teach the concentration of the fillers. However, concentration limitations are considered obvious absent a showing of a criticality (*Akzo vs. E.I. du Pont de Nemours* 1 USPQ 2d 1704). Therefore, it is the examiner's position that the claimed concentration of fillers in the material of Boeke et al. would have been obvious to one skilled in the art.

5. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hiraoka et al. in view of Hirsch et al. and Boeke et al.

Hiraoka et al. teaches adding a filler to a polymeric material, molding the material into an article, irradiating the molded material with a laser at an energy of 50-500 J/cm², and then treating the molded material with a palladium catalyst, before electroless plating, where the polymeric material can be polyphenylene sulfide or a blend of polymeric materials (Col. 2, lines 46-63; Col. 3, lines 3-30; Example 1). The use of the blend of polymeric materials reads on the limitations of Claim 6, as the two or more different polymers in the blend would have been expected to have different laser ablation threshold values. Hiraoka et al. does not specifically teach that the palladium catalyst is in the form an aqueous solution. However, the application of palladium in an aqueous solution as a catalyst to an electroless plating process is well known in the art as shown by Hirsch et al. Hirsch et al. teaches electroless plating a polymer substrate by dipping the polymer in an aqueous palladium solution, as a catalyst, and then electroless plating (Col. 3, lines 18-35). It would have been an obvious modification to Hiraoka et al. to apply the palladium catalyst by dipping the polymeric molded material into an aqueous solution of the

palladium catalyst, with the expectation of providing the desired electroless plating catalyst on the surface, since such application of the electroless plating catalyst as an aqueous solution is well known and conventional in the art, as shown by Hirsch et al.

Hiraoka et al. does not teach that the polymeric article is a mold. However, the use of the article of Hiraoka et al. as a mold is merely the intended use of the article. The molded articles described by Hiraoka et al. are capable of being used as a mold, as they can provide a surface upon which material can be molded. Therefore, the material of Hiraoka et al. meets the material limitations of the claim.

Hiraoka et al. does not teach the nature of the fillers. Boeke et al. is applied here for the same reasons as given above. Boeke et al. teaches the use of inorganic fillers, such as silica or fiberglass, in molded polymeric articles to be electrolessly plated. It would have been an obvious variation to the Hiraoka et al. process to use inorganic fillers, such as those of Boeke et al., with the expectation of providing the desired properties to the molded article, depending on the end use, since it is shown by Boeke et al. that such fillers are typical fillers for molded polymeric articles to be electrolessly plated, which is the desire of Hiraoka et al.

Hiraoka et al. does not teach the concentration of the fillers. However, concentration limitations are considered obvious absent a showing of a criticality (*Akzo vs. E.I. du Pont de Nemours* 1 USPQ 2d 1704). Therefore, it is the examiner's position that the claimed concentration of fillers in the material of Hiraoka et al. would have been obvious to one skilled in the art.

Hiraoka et al., Hirsch et al., and Boeke et al. do not teach that the laser is irradiated in the manner of Claim 4. While Hiraoka et al., Hirsch et al., and Boeke et al. do not indicate that the

laser is applied in a manner that precipitates the palladium on the irradiated area, Hiraoka et al., Hirsch et al., and Boeke et al. do teach the same process materials and laser energies as the claimed invention. Therefore, it would have been expected that the Hiraoka et al., Hirsch et al., and Boeke et al. process would have also inherently had the property of the precipitation of the palladium on the irradiated surface. If this is not the case, then it must be due to critical limitations not being claimed.

Conclusion

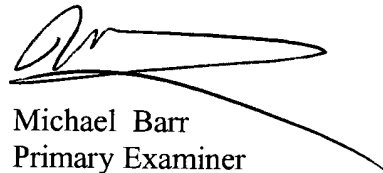
6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Baumgartner et al. teaches electroless plating a polymeric mold surface, where the mold includes inorganic fillers and where the mold is activated with a palladium solution.

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7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Barr whose telephone number is 703-305-7919. The examiner can normally be reached on Monday-Thursday 6:00 am-4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive Beck can be reached on 703-308-2333. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 or 703-305-5408 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



Michael Barr
Primary Examiner
Art Unit 1762

MB
March 26, 2003